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Claims

1. Motor vehicle, comprising a hybrid drive device (4) with an internal combustion engine (6) and at least one electric machine (8, 10); at least one electric energy storage mechanism (12); a fuel cell system (14) for generating electric power, characterized in that the fuel cell system (14) is designed as an auxiliary power source for delivering a lower power than the internal combustion engine (6); a control unit (30) is provided, by which the fuel cell system (14) can be operated continuously in a predetermined operating range or at a predetermined operating point of a high efficiency, whereby the power it can deliver can be supplied at least to one power consuming device (8, 10, 12, 22, 24, 30) and any excess power of the fuel cell system (14) can be supplied to at least one additional power consuming device (8, 10, 12, 22, 24, 30) to maintain the high delivery of power by the fuel cell system (14) as required for said high efficiency.

2. Motor vehicle as claimed in Claim 1, characterized in that the excess power of the fuel cell system (14) can be supplied at least partially into the at least one energy storage mechanism (12) so that the latter functions as the additional power consuming device.

3. Motor vehicle as claimed in Claim 1 or 2, characterized in that the excess energy can be at least partially supplied to the at least one electric machine (8, 10) as driving power, so that the electric machine serves as the additional power consuming device.

4. Motor vehicle as claimed in Claim 1, characterized in that at least some of the excess energy of the fuel cell system (14) can be supplied at least partially to the at least one electric machine (8, 10) and/or to the at least one energy storage mechanism (12) as a function of at least one operating criterion so that these devices serve as the additional power consuming devices.

5. Motor vehicle as claimed in Claim 4, characterized in that at least one of the following operating criteria is provided: drive power demand of

the motor vehicle, charge status and maximum charge capacity of the at least one electric energy storage mechanism.

6. Vehicle according to at least one of the preceding claims, characterized in that the fuel cell system (14) is designed, with respect to its maximum deliverable power, for only the maximum power demand of the vehicle electric system and of at least one secondary unit (22, 24) which does not deliver any driving power.

7. Vehicle as claimed in Claim 6, characterized in that at least one of the following secondary units is provided: air conditioning system, interior heating, seat heating, cigarette lighter, radio, television, navigation system, data processing system, ice chest or refrigerator, window opener, door opener, sunroof or convertible top opener, trunk opener, vehicle steering, vehicle brake system, vehicle interior lighting, vehicle exterior lighting, telecommunications system, compressor, oil pump, water pump, gasoline pump, a tool unit, in particular a cable wench, vehicle lift or a street sweeper brush.

8. Vehicle as claimed in at least one of the preceding claims, characterized in that the predetermined operating range or operating point is at or near the maximum efficiency η_{max} of the fuel cell system (14).

9. Method for operating a motor vehicle comprising a hybrid drive device (4) with an internal combustion engine (6) and at least one electric machine (8, 10); a fuel cell system (14) for generating electric power; at least one electric power storage mechanism (12), characterized in that the fuel cell system (14) is designed as an auxiliary power source for delivering a lower power than the internal combustion engine (6) and, when it is activated, it is operated continuously in an operating range or at an operating point of high efficiency, whereby the power it can deliver is supplied to at least one power consuming device (8, 10, 12, 22, 24, 30) and any excess power generated by the fuel cell system (14) is supplied to at least one other power consuming device (8, 10, 12, 22, 24, 30) to maintain the high power withdrawal from the fuel cell system (14) which is necessary for the aforementioned efficiency.

10. Method as claimed in Claim 8, characterized in that the excess energy of the fuel cell system (14) can be stored at least partially in one of the at least one energy storage mechanisms (12).

11. Method as claimed in Claim 9 or 10, characterized in that the predetermined operating range or operating point is at or near the maximum efficiency of the fuel cell system (14).